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FIG. 1

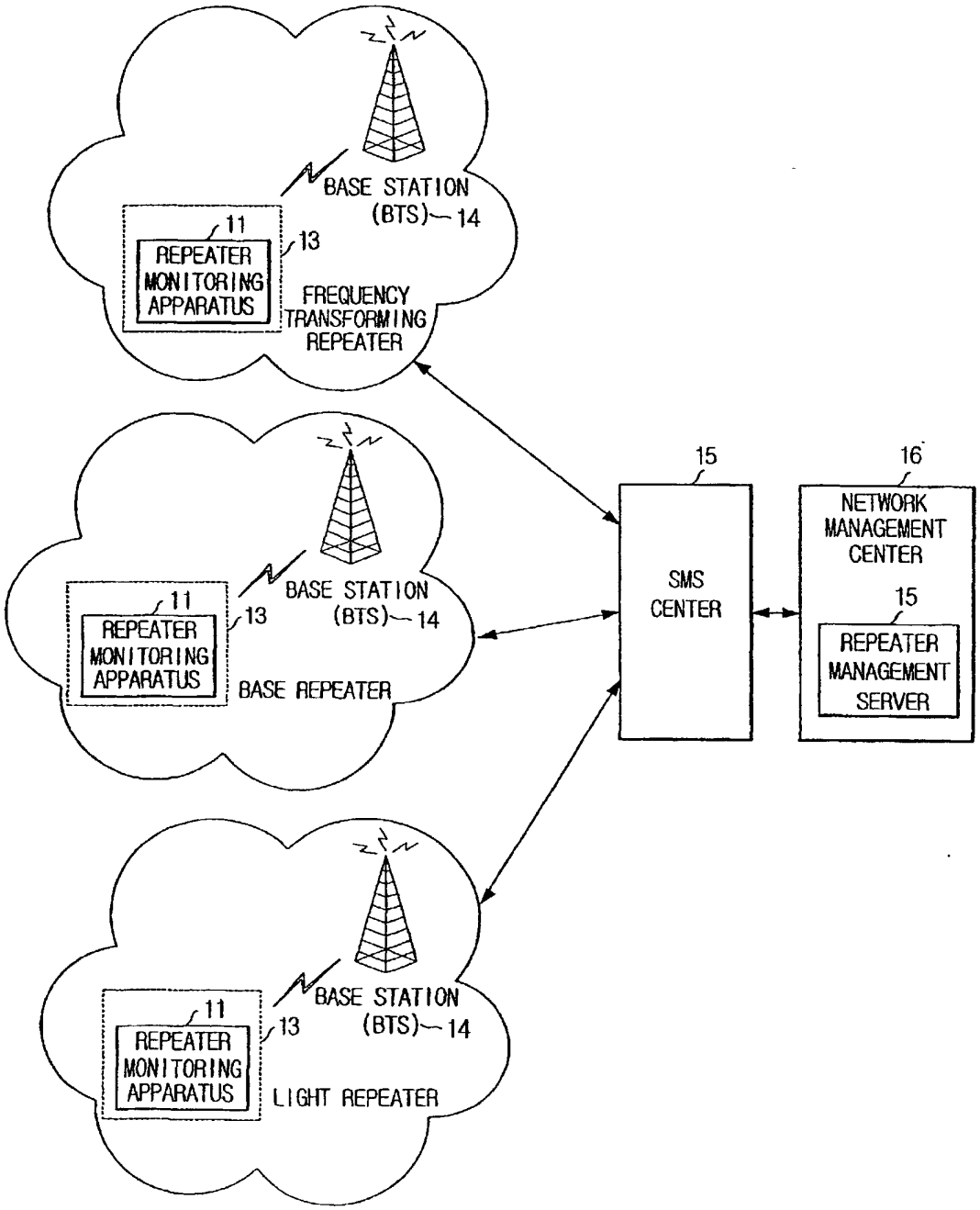
BASE STATION (BTS)
14
11
REPEATER MONITORING APPARATUS
13
FREQUENCY TRANSFORMING REPEATER
BASE STATION (BTS)
14
11
REPEATER MONITORING APPARATUS
13
BASE REPEATER
BASE STATION (BTS)
14
11
REPEATER MONITORING APPARATUS
13
LIGHT REPEATER
15
SMS CENTER
16
NETWORK MANAGEMENT CENTER
15
REPEATER MANAGEMENT SERVER

FIG. 2A

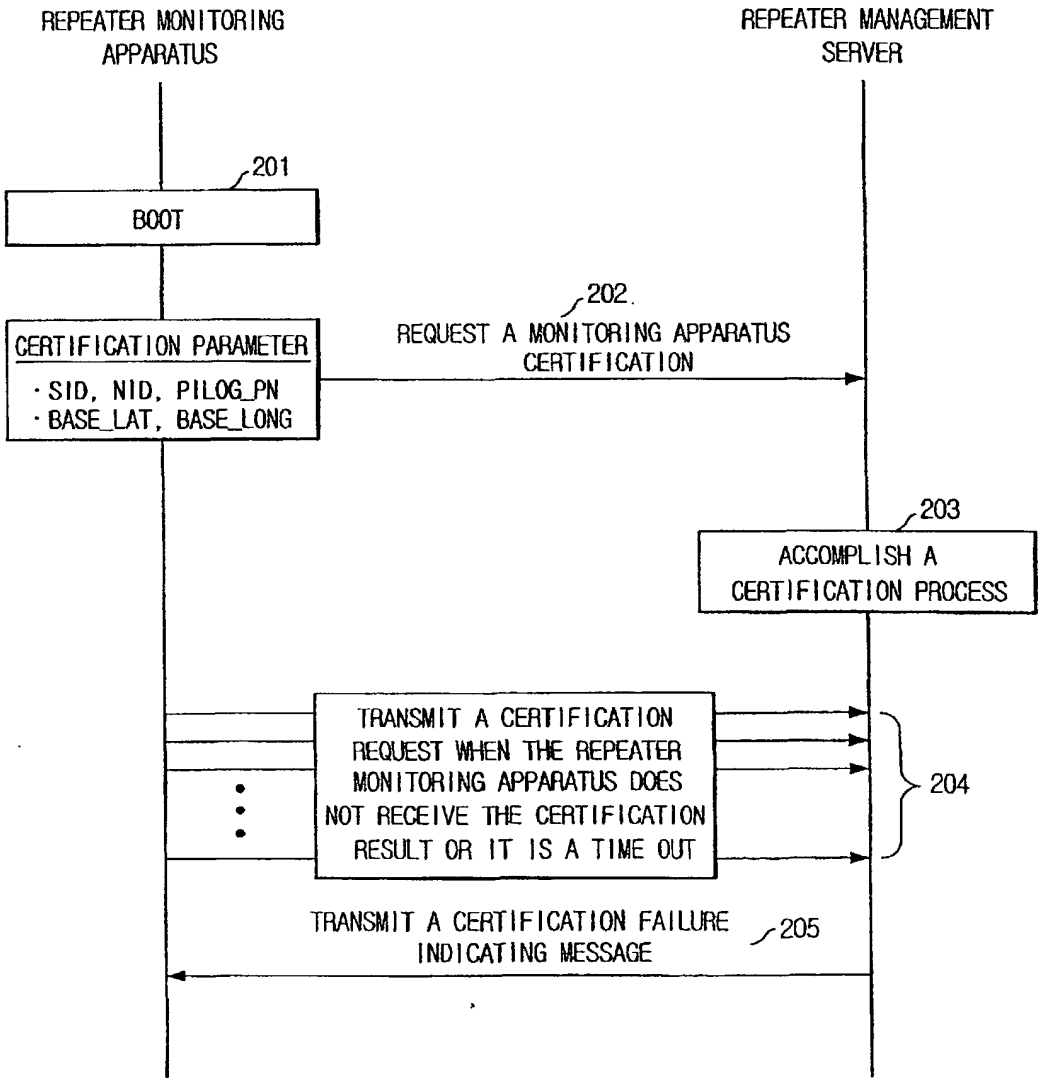
REPEATER MONITORING APPARATUS
REPEATER MANAGEMENT SERVER
201
BOOT
CERTIFICATION PARAMETER
· SID, NID, PILOG_PN
· BASE_LAT, BASE_LONG
202
REQUEST A MONITORING APPARATUS CERTIFICATION
203
ACCOMPLISH A CERTIFICATION PROCESS
TRANSMIT A CERTIFICATION REQUEST WHEN THE REPEATER MONITORING APPARATUS DOES NOT RECEIVE THE CERTIFICATION RESULT OR IT IS A TIME OUT
204
TRANSMIT A CERTIFICATION FAILURE INDICATING MESSAGE
205

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FIG. 2B

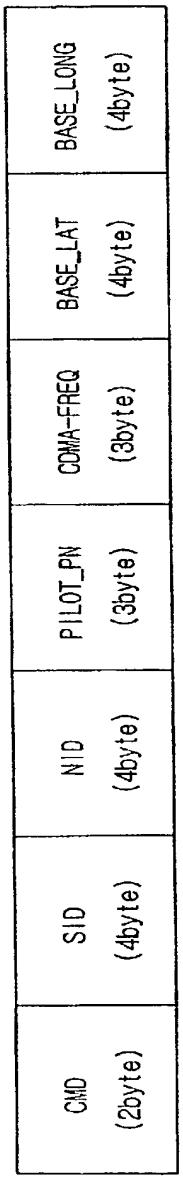
CMD (2byte)
SID (4byte)
NID (4byte)
PILOT_PN (3byte)
CDMA-FREQ (3byte)
BASE_LAT (4byte)
BASE_LONG (4byte)

FIG. 3A

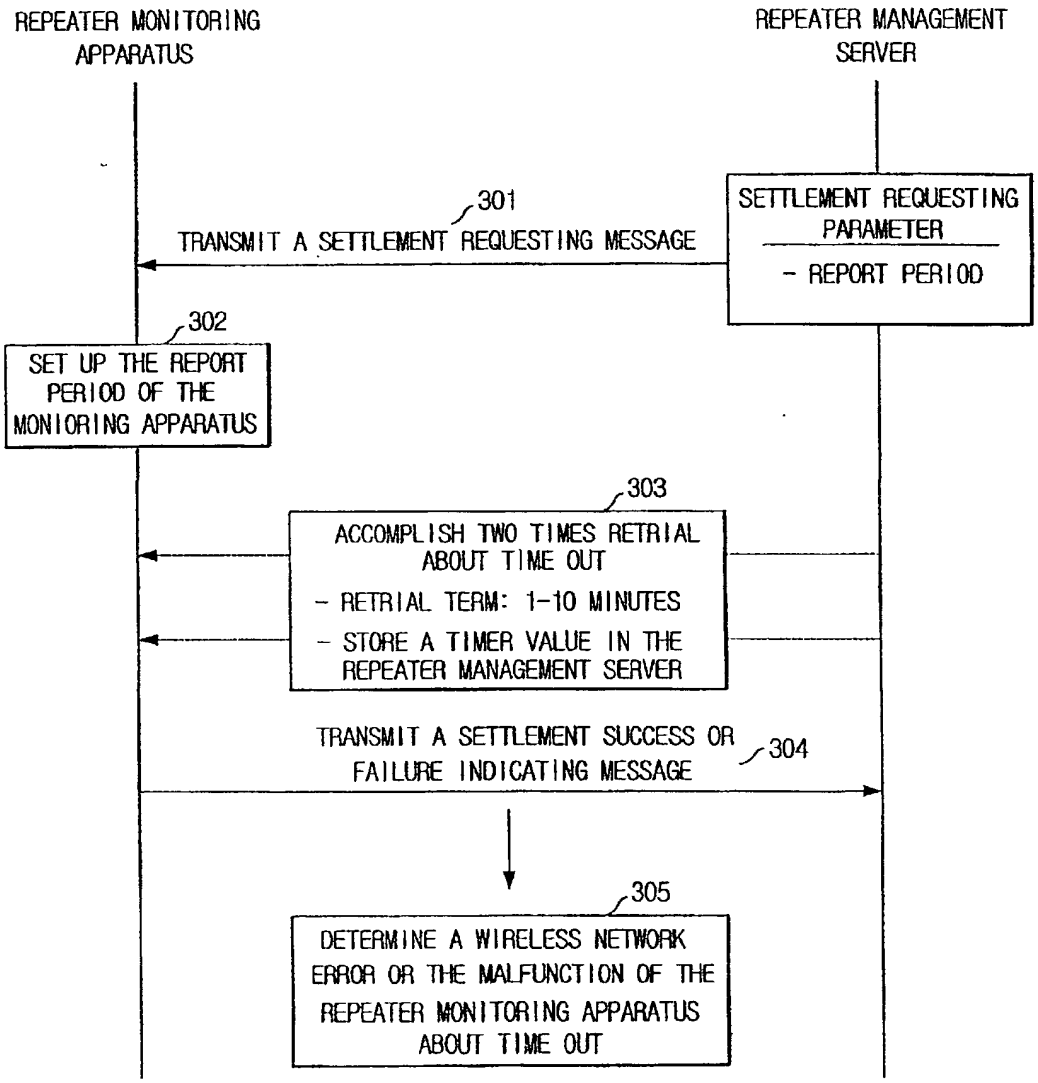
REPEATER MONITORING APPARATUS
REPEATER MANAGEMENT SERVER
301
TRANSMIT A SETTLEMENT REQUESTING MESSAGE
SETTLEMENT REQUESTING PARAMETER
- REPORT PERIOD
302
SET UP THE REPORT PERIOD OF THE MONIORING APPARATUS
303
ACCOMPLISH TWO TIMES RETRIAL ABOUT TIME OUT
- RETRIAL TERM: 1-10 MINUTES
- STORE A TIMER VALUE IN THE REPEATER MANAGEMENT SERVER
TRANSMIT A SETTLEMENT SUCCESS OR FAILURE INDICATING MESSAGE
304
305
DETERMINE A WIRELESS NETWORK ERROR OR THE MALFUNCTION OF THE REPEATER MONITORING APPARATUS ABOUT TIME OUT

FIG. 3B

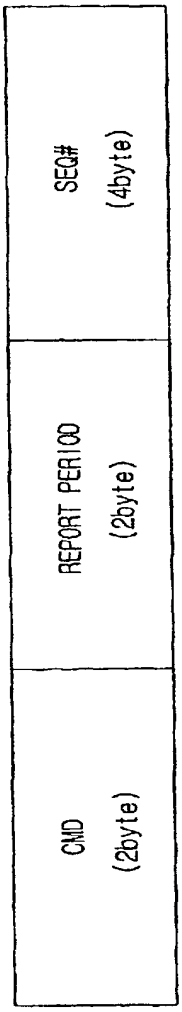

FIG. 4A

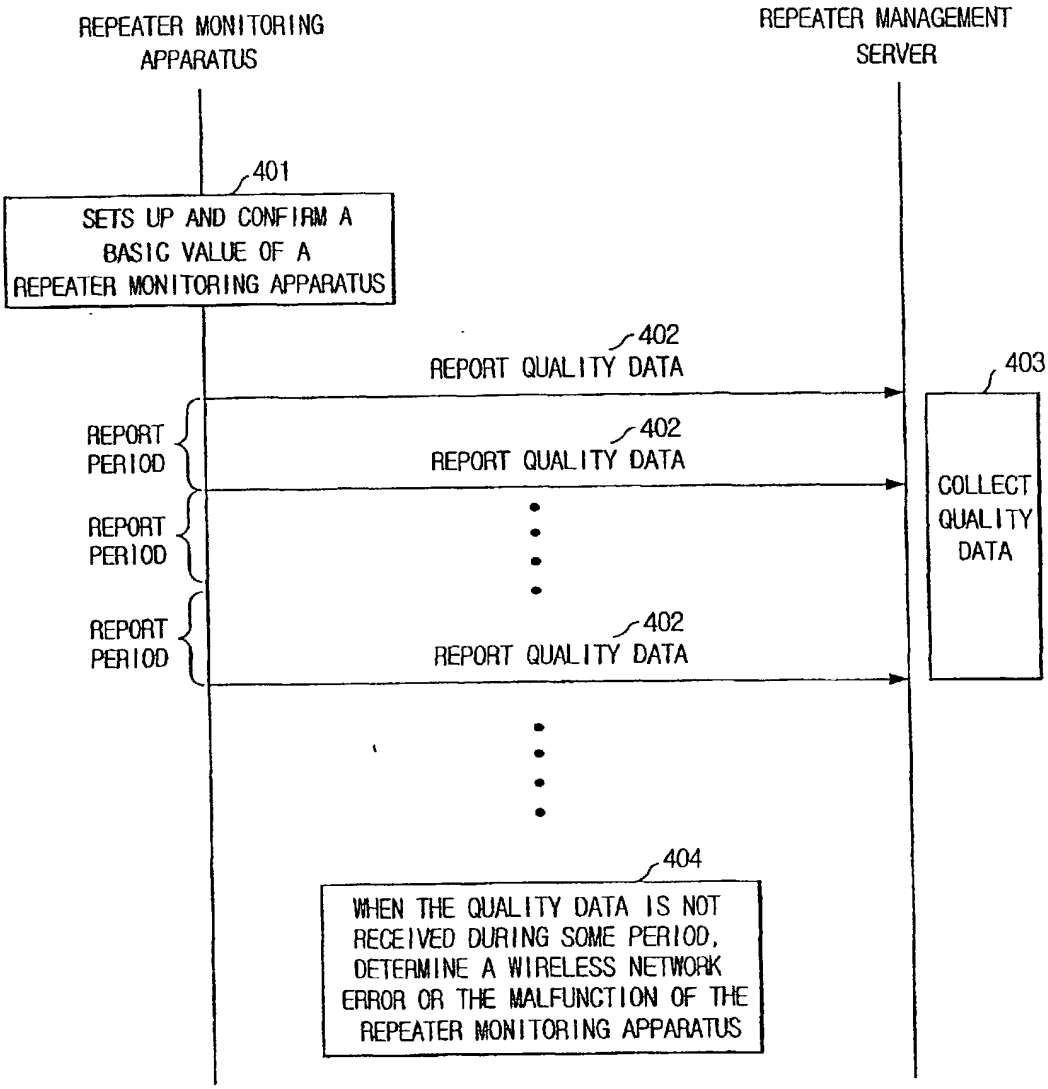
REPEATER MONITORING APPARATUS
REPEATER MANAGEMENT SERVER
401
SETS UP AND CONFIRM A BASIC VALUE OF A REPEATER MONITORING APPARATUS
402
REPORT QUALITY DATA
403
REPORT PERIOD
402
REPORT QUALITY DATA
COLLECT QUALITY DATA
REPORT PERIOD
REPORT PERIOD
402
REPORT QUALITY DATA
404
WHEN THE QUALITY DATA IS NOT RECEIVED DURING SOME PERIOD, DETERMINE A WIRELESS NETWORK ERROR OR THE MALFUNCTION OF THE REPEATER MONITORING APPARATUS

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FIG. 4B

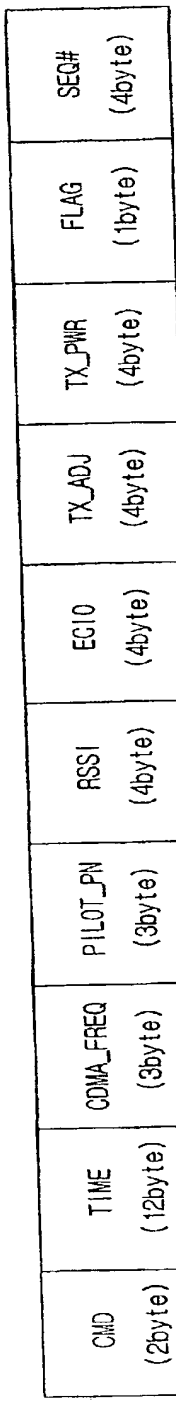
CMD (2byte)
TIME (12byte)
CDMA_FREQ (3byte)
PILOT_PN (3byte)
RSSI (4byte)
ECIO (4byte)
TX_ADJ (4byte)
TX_PWR (4byte)
FLAG (1byte)
SEQ# (4byte)

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FIG. 4C

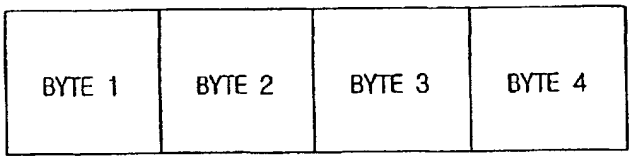

FIG. 5A

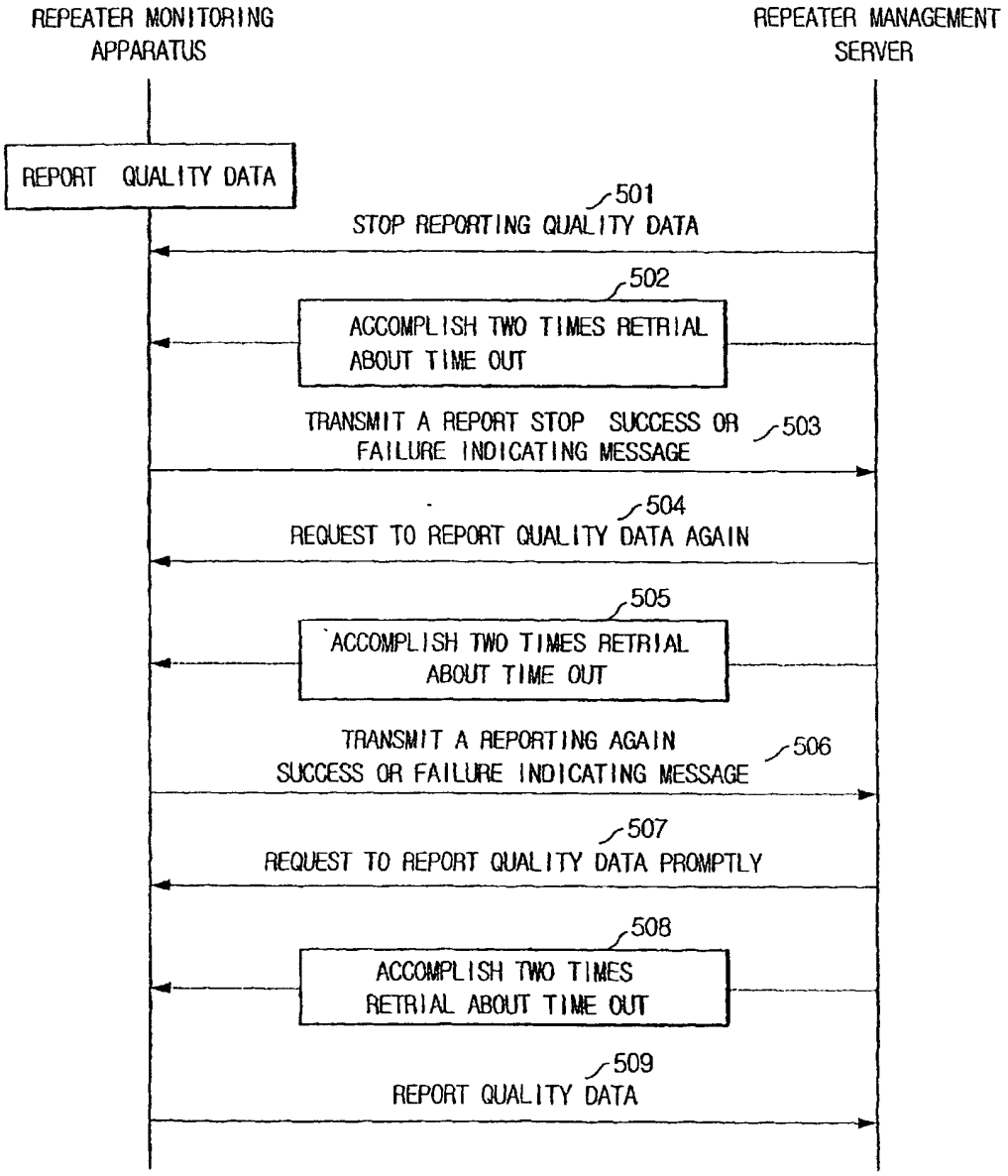
REPEATER MONITORING APPARATUS
REPEATER MANAGEMENT SERVER
REPORT QUALITY DATA
501
STOP REPORTING QUALITY DATA
502
ACCOMPLISH TWO TIMES RETRIAL ABOUT TIME OUT
TRANSMIT A REPORT STOP SUCCESS OR FAILURE INDICATING MESSAGE
503
504
REQUEST TO REPORT QUALITY DATA AGAIN
505
ACCOMPLISH TWO TIMES RETRIAL ABOUT TIME OUT
TRANSMIT A REPORTING AGAIN SUCCESS OR FAILURE INDICATING MESSAGE
506
507
REQUEST TO REPORT QUALITY DATA PROMPTLY
508
ACCOMPLISH TWO TIMES RETRIAL ABOUT TIME OUT
509
REPORT QUALITY DATA

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FIG. 5B

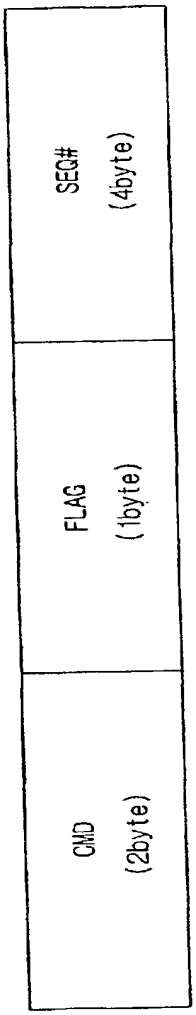


FIG. 6A

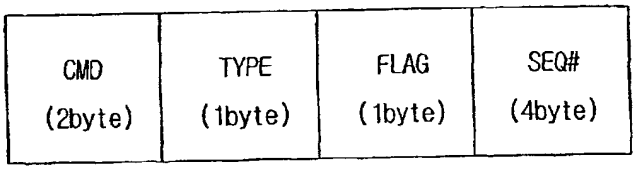
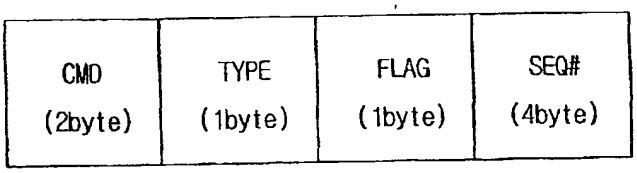

CMD
(2byte)
TYPE
(1byte)
FLAG
(1byte)
SEQ#
(4byte)

FIG. 6B


CMD
(2byte)
TYPE
(1byte)
FLAG
(1byte)
SEQ#
(4byte)